

WAXHAM (F. E.)

THE TREATMENT OF DIPHTHERIA.

Read in the Section on Diseases of Children at the Forty-fourth Annual Meeting of the American Medical Association.

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It is to be hoped that in the not far distant future the inoculation treatment of diphtheria will supersede or largely displace all other treatment. The researches in the field of bacteriology; the discovery of the Klebs-Löffler bacillus and the various experiments with ptomaines and anti-toxines are most assuring. Yet notwithstanding the fact that Bering and Kitasato have clearly demonstrated that cultures, which will invariably kill susceptible animals in very small amounts, have their toxic properties entirely destroyed by the addition of the blood of an immune animal; and while the experiments upon animals have been such as to give us confidence in the future treatment of the disease by inoculation, yet for the present we must rely upon the well-tried methods of to-day.

While mice inoculated with a virulent filtrate, neutralized by the addition of immune blood have remained immune to diphtheria for forty or fifty days, yet this method has not been employed with satisfaction in the human subject. There are still great difficulties to be overcome and much experimentation still to be done before this treatment can be applied to man. We ascribe all honor to the investigators who have already accomplished so much and look to them with interest and hope for the future.

I shall not occupy your time in discussing the preventive treatment, important as it is, for it would only be to reiterate principles that are perfectly familiar to all.

In considering the treatment of this disease we may for brevity, confine our remarks to four headings: 1, nourishment; 2, stimulation; 3, internal medication, and 4, local antiseptis.

In the treatment of this disease, nourishment is quite as important as medication, and the life of the patient often depends, not only upon alcohol, oxygen and the local use of antiseptics, but upon proper and abundant nourishment as well. On account of the energetic employment of various remedies, the importance of feeding is often overlooked. We sometimes neglect to inquire explicitly in regard to the amount that is taken, and we frequently find that very little is given when we had supposed that the child had been receiving a sufficient amount. On account of the loss of appetite and the pain of swallowing, a patient often refuses all nourishment; and there is sometimes an insane repugnance for all food, which can not be overcome by ordinary means. In these cases we should at once resort to forced feeding. We should endeavor at frequent intervals to give some nourishment by the mouth, while peptonized food should be given by enema. If a patient absolutely refuses all nourishment by the mouth I would emphasize the importance of introducing a small gum elastic catheter into the stomach by way of the nasal cavities.

After the introduction, a safety pin should be passed through the end of the catheter to prevent its slipping beyond reach. It may be allowed to remain as it gives rise to but little irritation, or it may be removed and re-introduced at each feeding. It, however, should be removed two or three times daily and cleansed and the nasal cavities flushed with a warm alkalin antiseptic solution. Milk and stimulants in full quantities can be introduced through the catheter by means of a syringe, and I am convinced that many lives may be saved in this manner that would otherwise perish.

There are those who oppose the idea of alcoholic

stimulation in the treatment of this disease, but I believe it is the judgment of the profession generally that it is a very important remedy. While mild cases do not require its use, yet in severe or malignant cases it is imperatively demanded. It is a well-known fact that alcohol is one of the most potent destroyers of microorganisms in culture fluids. Its benefit in diphtheria is undoubtedly due to its antidotal action upon the ptomaines in the blood. In no other way can we explain the fact that alcoholism is not produced, even when it is given in large quantities. When required, it should be given freely; at least one or two teaspoonfuls of whisky or brandy or its equivalent of alcohol, every hour or half hour, according to the urgency of the case. In severe or malignant cases, other stimulants must also be given, as strychnia, musk and ammonia.

In regard to internal medication, there is one remedy that stands out preëminently above all others. While so-called specifics have come and gone, this one, the tincture of the chlorid of iron, has remained as one of our sheet anchors in the treatment of diphtheria. No one claims it to be a specific, yet it is a fact that red blood corpuscles increase amazingly under full doses of this agent, hence its usefulness as an internal remedy, while its local effect as an astringent and antiseptic increases its efficacy. It should be given in frequent and full doses; ten, fifteen or twenty drops to young children, all that the stomach will tolerate, and it should be repeated every hour or half hour. Should it disturb the stomach, carbolic acid should be combined with it.

There are other remedies, such as bichlorid of mercury, turpentine and chlorate of potash, that have been much used; but in very severe cases of pharyngeal diphtheria I believe they are too irritating to the kidneys and should be employed with caution. In laryngeal diphtheria, where the kidneys are not frequently involved, however, the bichlorid of mercury is the most useful remedy at our command.

The local antiseptic treatment of diphtheria is of the utmost importance. It matters little what antiseptics are employed, providing they are thoroughly applied to the throat and nasal cavities. Carbolic acid, bichlorid of mercury, pyoktanin, chlorin water and peroxid of hydrogen are agents that have frequently been employed with more or less success. The results, however, will depend, not so much upon the remedy selected, as upon the method employed. To spray the throat with the most effective antiseptic, leaving the nasal cavities uncared for will only invite failure; while to use an antiseptic solution that does not thoroughly irrigate the whole nasal tract will be inefficient.

The bichlorid of mercury is undoubtedly one of the most powerful germicides at our command, and in the strength of 1-4000 is not irritating. The peroxid of hydrogen diluted to one part to four of water is also efficient, but its use should be followed by a warm alkalin douche. When the spray from a hand atomizer will reach the whole nasal tract it is to be preferred to the douche, as there is no danger of forcing the fluid into the middle ear. This accident which will occasionally result from the too forcible use of the douche is an unfortunate one. One of the most effective methods of treating the nasal cavities is by means of the soft rubber catheter, as first suggested by the President of this Section. This should be introduced along the floor of the nasal cavities until it reaches the post-nasal space when, by means of a small syringe, a warm, alkalin antiseptic solution can be gently introduced and the whole nasal tract thus thoroughly irrigated. The advantages over the atomizer are obvious for when the nasal cavities are obstructed the spray simply rebounds and the deeper parts remain untreated. I would advocate the early use of the douche in this manner in all cases of diphtheria where there is the slightest tendency to invasion of the nasal cavities.

It seems proven beyond doubt that the disease

is primarily a local one, and that the constitutional symptoms are the result of ptomaine poisoning; this poison being produced by the bacilli which are found in countless numbers in the diphtheritic exudate. How necessary, then, that the local treatment should be most thorough and efficient. To recapitulate: the indications in the treatment of diphtheria are to destroy, as far as possible, the bacilli by the thorough and early use of our most powerful germicides; to support the system and prevent the disorganization of the blood by abundant nourishment, free stimulation and full and frequent doses of iron.



